Technical Data IPS800

Rating 4/5

General

4-stroke direct injected, turbocharged and aftercooled diesel engine

Number of cylinders		6
No of valves		24
Displacement, total	litres in³	10,84 661,3
Firing order		1-5-3-6-2-4
Rotational direction, viewed from the front		Clockwise
Bore	mm in	123 4,84
Stroke	mm in	152 5,98
Compression ratio		16,5:1
Compression pressure at 240 rpm	MPa psi	
Max. static forward inclination:	°	0
Max. static backward inclination:	°	7
Max. intermittent forward inclination while running:	°	10
Max. intermittent backward inclination while running:	°	17
Max. intermittent side inclination while running:	°	30
Idling speed	rpm	600 (-50 / +50)
Rated speed	rpm	2300
Propeller selection range	rpm	2250 - 2350
Recommended WOT range	rpm	2250 - 2350
Dry weight engine BT	kg lb	1175 2590
Dry weight with drive IPS	kg lb	1800 3968

Performance	**Rating**	**r/min**	**700**	**900**	**1100**	**1300**	**1500**	**1700**	**1900**	**2100**	**2300**
Crankshaft power 1), 5)	5	kW	108	172	225	303	354	401	441	441	441,2
		hp	147	233,9	306	412,1	481,4	545,4	599,8	599,8	600
Propeller shaft power 1) (At full load)	5	kW	102	163	213	286	335	379	417	417	417
With drive IPS		hp	139	221	289	389	455	515	567	567	567
Propellershaft power at prop. load $x^{2,5}$	5	kW	21	40	66	100	143	196	259	332	417
With drive IPS		hp	29	54	90	136	195	266	352	452	567
Torque at crankshaft 2)	5	Nm	1473	1825	1953	2226	2254	2253	2216	2005	1832
		lbf ft	1087	1346	1441	1642	1662	1661	1635	1479	1351
Mean piston speed		m/s	3,5	4,6	5,6	6,6	7,6	8,6	9,6	10,6	11,7
		ft/s	11,6	15,0	18,3	21,6	24,9	28,3	31,6	34,9	38,2
Effective mean pressure 2)	5	MPa	1,71	2,12	2,27	2,58	2,61	2,61	2,57	2,33	2,12
		psi	247,8	306,9	328,5	374,3	379,0	378,8	372,8	337,3	308,1

1) ISO 3046, fuel temp 40°C.
ISO 8665 (=SAE J 1228=ICOMIA 28-83)
2) At power according to 1).
3) If reverse gear is used, 4% in heat rejection will be added for its oil cooler.
4) Acc. to ISO 3744
5) At installed back pressure

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Lubricating system

Specific lubricating oil consumption.	g/kWh	0,1
Max. oil volume including filters for 0 installation inclination	litres	36
	US gal	9,51
Max. oil volume excluding filters for 0 installation inclination	litres	30
	US gal	7,93
Min. oil volume excluding filters for 0 installation inclination:	litres	24
	US gal	6,34
Max. oil volume including filters for 7 installation inclination	litres	30
	US gal	7,93
Max. oil volume excluding filters for 7 installation inclination	litres	25
	US gal	6,60
Min. oil volume excluding filters for 7 installation inclination:	litres	21
	US gal	5,55

Fuel system	**Rating**	**r/min**	**700**	**900**	**1100**	**1300**	**1500**	**1700**	**1900**	**2100**	**2300**
Specific fuel consumption 2)	5	g/kWh	227	240	243	211	201	202	208	212	219
		lb/hph	0,368	0,389	0,394	0,342	0,326	0,327	0,337	0,343	0,355
Fuel consumption at prop. load x [2,5]	5	l/h	6,848	11,72	19,11	27,75	38,6	51,05	67,41	87,42	115,5
		US gal/h	1,8	3,1	5,0	7,3	10,2	13,5	17,8	23,1	30,5
Fuel consumption at full load	5	l/h	29,32	49,37	65,39	76,46	85,09	96,87	109,7	111,8	115,5
		US gal/h	7,7	13,0	17,3	20,2	22,5	25,6	29,0	29,5	30,5

Intake and exhaust system	**Rating**	**r/min**	**700**	**900**	**1100**	**1300**	**1500**	**1700**	**1900**	**2100**	**2300**
Specific exhaust heating effect in percent of crankshaft power	5	%	77	90	90	78	73	76	80	83	87
Exhaust temperature at the exhaust pipe connecting flange after the turbo charger.	5	°C	540	677	690	604	525	518	529	512	508
		°F	1004	1251	1274	1119	977	964	984	954	946
Permitted back pressure in the exhaust line at rated speed. (Installed back pressure)		kPa							Max		15
		psi									2,2
		kPa							Min		
		psi									

Intake and exhaust system	**Rating**	**r/min**	**700**	**900**	**1100**	**1300**	**1500**	**1700**	**1900**	**2100**	**2300**
Engine air consumption at 25°C / 77°F atmospheric pressure 100kPA and relative humidity 30%.	5	m³/min	6,65	9,467	12,12	16,75	21,83	25,78	29,52	31,82	33,68
		cu.ft./min	234,8	334,3	427,9	591,5	771	910,5	1042	1124	1190
Turbo charge pressure.	5	kPa	87	108	120	158	191	206	216	212	206
		psi	12,6	15,7	17,4	22,9	27,7	29,9	31,3	30,7	29,9
Exhaust gas flow	5	m³/min	19,6	32,7	42,1	50,9	58,9	67,1	76,2	79,0	82,2
		cu.ft./min	690,4	1154	1486	1798	2081	2370	2690	2790	2904

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Cooling system	**Rating**	**r/min**	**700**	**900**	**1100**	**1300**	**1500**	**1700**	**1900**	**2100**	**2300**
Radiated heat in percent of crankshaft power.	5	%	12	6	3,6	2,4	1,9	1,6	1,4	1,4	1,5
Heat rejection to charge air cooler in percent of crankshaft power.	5	%	2	6	8	13	12	15	15	16	14
Coolant heat rejection to HE, incl. engine oil cooler and excl. charge air cooler, in percent of crankshaft power.	5	%	82	82	59	62	55	53	55	55	59
Sea water pump flow.		l/min	120	155	191	230	258	286	310	330	340
		cu.ft./min	4,2	5,5	6,7	8,1	9,1	10,1	10,9	11,7	12,0
Coolant flow with fully open thermostat and std cooling system		l/min	248	332	421	506	582	661	736	803	857
		cu.ft./min	8,8	11,7	14,9	17,9	20,6	23,3	26,0	28,4	30,3
Max. permissible temperature on coolant in engine outlet		°C	96								
		°F	205								
Coolant volume engine, including heat exchanger and charge air cooler		litres	46								
		US gal.	12,15								
Max. additional coolant for cabin heater etc. with std. Expansion tank		litres	40								
		US gal.	10,57								
Thermostat, start open at		°C	76								
		°F	169								
Thermostat, fully open at		°C	86								
		°F	187								

Emissions	**Rating**	**r/min**	**700**	**900**	**1100**	**1300**	**1500**	**1700**	**1900**	**2100**	**2300**
Smoke at prop. load $x^{2,5}$	5	*BSU	0,0	0,2	1,0	1,1	0,7	0,4	0,1	0,1	0,7
Noise at prop. load $x^{2,5}$. 4)	5	dBA	105,6	108,9	110,1	111,4	112,8	113,4	115,1	116,7	118,2

***NB.!** BSU are calculated values. Measured values are acc. to ISO 10054 in FSN units

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